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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,250	02/18/2004	Marek Zywno	23227.P021D4	5000

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EXAMINER

COMPTON, ERIC B

ART UNIT	PAPER NUMBER
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3726

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/782,250

Applicant(s)

ZYWNO, MAREK

Examiner

Eric B. Compton

Art Unit

3726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41,42 and 45-62 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 41,42,45-54,56-59,61 and 62 is/are rejected.
7) ☒ Claim(s) 55 and 60 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 41-42, 49-51, 53-54, and 61 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. 4,717,263 to Phillips.

Regarding claim 41, Phillips discloses a fluid bearing comprising:

a bearing plate (14) having a face surface (22) including an orifice (26) coupled to a plurality of grooves (30) edged on the face to supply fluid; and

a surface restrictor (28) disposed within at least one groove to restrict flow of fluid in the at least one groove as a pressure of the low of the fluid increase within the at least one groove.

Phillips teaches providing the bearing with “supplemental gas exhaust slots, as well as stepped annular land flow restrictors, to optimize bearing stability and operational bandwidth.” See Abstract.

Regarding claim 42, “[E]ven though product-by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art,

the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding claim 49, as shown in Figure 2, the surface restrictor forms a meandering channel for the fluid flow, which is different than the shape of the groove.

Regarding claim 50, as shown in Figure 1, the orifice is disposed substantially centrally on the face surface.

Regarding claim 51, Phillips discloses at least four grooves symmetrically coupled to the orifice. Note: Applicant's claims is not limited to four since Applicant uses "comprising of."

Regarding claim 53, Phillips discloses the width of the grooves may be 0.010 in. See Col. 8, line 10.

Regarding claim 54, Phillips discloses this feature. See Col. 2, lines 47-50 (slots and channels minimize the outgoing flow resistance.).

Regarding claim 56, these devices are known to be used with vacuum chucks. See Phillips, Col. 2, lines 54-69 (discussing vacuum hold-down pockets).

Regarding claim 61, Phillips discloses a fluid bearing comprising: a bearing plate (14) having a face surface (22) including an orifice (26) disposed substantially centrally on the bearing plate and coupled to a plurality of grooves (30) edged on the face surface to supply fluid, wherein the plurality of grooves is symmetrically disposed with respect to the orifice; and a surface restrictor (28) disposed within each groove to restrict a flow of the fluid in the at least one groove as a pressure of the flow of the fluid increases within the at least one groove.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 52 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phillips.

Phillips does not explicitly disclose the diameter of the orifice. However, pressure requirement are provided. See Col. 3, lines 45-65.

Regarding claim 52, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have formed the fluid bearing of Phillips having an orifice diameter of 0.001 in to 0.01 in, in order to provide sufficient air flow to raise the bearing. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Phillips does not explicitly disclose the design of the bearing of claim 62, However, Phillips does disclose multiple embodiment of slot designs and layouts. As shown in Figure 1-2, the grooves extend outwardly from the orifice to the edge of the bearing plate. In Figure 7, the grooves may extend in parallel to the outer edges of the plates. In Figures 9-10, the grooves may extend both outwardly and parallel to the edges.

Regarding claim 62, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have formed the fluid bearing of Phillips having an straight grove portions and curved portions, in order to provide sufficient air flow to raise the bearing of having a particular size or design. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

5. Claims 45-48 and 57-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phillips in view of JP 55-115973 to Matsumoto.

Phillips discloses the invention cited above, but does not disclose the bearing is formed by etching.

Matsumoto discloses a method of forming a bearing member (see Fig. 2) for a fluid interface comprising: etching a pattern (via masks 15, 16) in a bearing plate surface of a bearing plate (see Fig. 4; JPO English Abstract "Constitution" (disclosing etching), said bearing plate surface providing a surface for said fluid interface and said pattern providing for fluid flow in said fluid interface. See *also* U.S. Pat. 3,134,336 to Huffman et al ("Huffman"); U.S. Pat. 5,407,280 to Heinzl et al ("Heinzl"); IBM Technical Disclosure entitled "Air Bearing Construction" ("IBM") (all disclosing etching fluid bearings).

Regarding claim 45, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have formed the fluid bearing of Phillips by

etchings, in light of the teachings of Matsumoto, in order to provide a fluid bearing which can be formed with "high accuracy readily and inexpensively." JPO English Abstract.

Regarding claim 46, in Matsumoto, the fluid interface is a fluid bearing and the method further comprises bonding said bearing plate to a bearing member. See JPO English Abstract ("... a bearing rigid body 1 and is pressed by vacuum pack to assume a style, after which it is bonded to the rigid body 1 by means of an adhesive agent.").

Regarding claim 47, in Matsumoto, the bonding step comprises applying an adhesive which is flexible before hardening between a bonding surface of said bearing plate (13) and said bearing member (1) and pressing said bearing plate surface against a predetermined surface during at least a portion of a time that said adhesive hardens. "The foil 13 having been formed with the multiple small holes 14 in this way is would about an object of the curvature smaller than a bearing rigid body 1 and is pressed by vacuum pack to assume a style, after which it is bonded to the rigid body 1 by means of an adhesive agent." JPO English Abstract.

Regarding claim 48, in Matsumoto, the pattern comprises a fluid flow restrictor etched into said bearing plate surface. See Fig 4 (showing flow restrictor).

Regarding claim 57, as shown in Figure 2, the surface restrictor forms a meandering channel for the fluid flow, which is different than the shape of the groove.

Regarding claim 58, Phillips discloses at least four grooves symmetrically coupled to the orifice. Note: Applicant's claims is not limited to four since Applicant uses "comprising of."

Regarding claim 59, Phillips discloses this feature. See Col. 2, lines 47-50 (slots and channels minimize the outgoing flow resistance.).

Allowable Subject Matter

6. Claims 55 and 60 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach or suggest a fluid bearing, wherein each of the plurality of grooves includes a surface restrictor, and wherein each surface restrictor of each groove has a pattern different than a remainder of the surface restrictors of a remainder of the grooves, in combination with the other claimed subject matter.

The design of Phillips does not seem capable of providing such a feature.

Response to Arguments

Applicant's arguments with respect to the claims filed March 7, 2005, have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B. Compton whose telephone number is (571) 272-4527. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (571) 272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Eric B. Compton
Primary Examiner
Art Unit 3726

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